

Amendments to the Claims

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of claims:

Claims 1-50 cancelled

51. (new) A light path extending between first and second zones that are sealed relative to each other, the light path comprising at least one optical fiber provided with a metal coating at least on the part of its length at the junction between said first and second zones, and wherein the portion of the optical fiber situated in the second zone is contained in a protective sheath which is separate from the fiber and which is adapted to maintain the respective pressure inside the protective sheath and in the second zone substantially equalized.

52. (new) The light path of claim 51, wherein the protective sheath is permeable to said second zone, and said metal coating also extends over the portion of the optical fiber inside the sheath.

53. (new) The light path of claim 51, wherein the end of the optical fiber that is situated in the second zone is connected to an optical measurement sensor via an optical connector.

54. (new) The light path of claim 53, wherein the optical connector comprises a metal ferrule having one end of the optical fiber stuck therein, said end being stripped of the metal coating.

55. (new) The light path of claim 51, wherein said first zone is situated inside an optical measurement tool and said second zone is situated outside said tool.

56. (new) The light path of claim 55, wherein the second zone is situated inside a production tube extending in a well passing through geological formations, with a petroleum fluid flowing along said production tube.

57. (new) The light path of claim 55, wherein the second zone is situated in the cemented annulus lying between the walls of a well passing through geological formations and casing of the well.

58. (new) The light path of claim 51, wherein the end of the optical fiber that is situated in the first zone is connected to a light emitter or to a light receiver.

59. (new) The light path of claim 51, wherein said first and second zones are sealed relative to each other by means of a sealing gasket such that the metal coating of the optical fiber comes directly into contact with said gasket.

60. (new) The light path of claim 59, wherein said sealing gasket is made of ceramic.

61. (new) The light path of claim 60, wherein said ceramic is compacted around said metal coating.